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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/709,637 | 05/19/2004 | Ting-Jui Chang | 11121-US-PA | 3636 |

31561 7590 01/13/2006

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

| EXAMINER | |
|---|---|
| CHIEN, LUCY P | |
| **ART UNIT** | **PAPER NUMBER** |
| 2871 | |

DATE MAILED: 01/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/709,637 | CHANG, TING-JUI | |
| | Examiner | Art Unit | |
| | Lucy P. Chien | 2871 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) 1-8 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-8 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 19 May 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

**Claim 1-4,6,8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto (US 5734177) in view of Yamakita et al (US 20020105613).

Sakamoto discloses (Figure 1) a base plate (not shown but in Abstract) a plurality of gate lines (6m or 11)(Figure 1 shows one pixel, second pixel would be right next to it which would show the 2nd gate line, this pertains to the rest of "plurality" lines claimed) disposed over the base plate, plurality of data lines (17) disposed over the base plate, wherein a pixel area (23) is formed between any two adjacent gate line (6m or 11) and any two adjacent data line (17), a plurality of active devices (8,5,9) disposed over the base plate, wherein each active device (8,5,9) is formed in an intersection region between the gate line (6m or 11) and data line (17) and electrically connected to corresponding gate line (6m or 11) and data line (17), a plurality of storage capacitors (Abstract) has an upper electrode (11) having at least a first aperture (the circle holes where 19 is located also shown below in response to argument) which is located underneath a pixel electrode near an edge of the pixel electrode (shown below in response to argument) And a plurality of pixel electrodes (11) disposed over the pixel area (23), wherein each the pixel electrodes (11) is respectively electrically connected to the corresponding active device (8,5,9) and the corresponding upper electrode (Column 10, Row 19-22).

Sakamoto does not teach the direction of the electric field adjacent to the first aperture being at a predetermined angle to an alignment direction of the liquid crystal

molecules, the liquid crystal layer possessing a transition from a splay state to a bend state.

Yamakita et al discloses (Figure 4a and 4b) the direction of the electric field adjacent to the first aperture being at a predetermined angle to an alignment direction of the liquid crystal molecules, the liquid crystal layer possessing a transition from a splay (Figure 4a) state to a bend state (Figure 4b). The response speed of the liquid crystal of the OCB-mode liquid crystal display panel is significantly improved compared to the Twisted nematic liquid crystal. (Page 1, [0010])

It would have been obvious to one skilled in the art to modify Sakamoto's display to include Yamakita et al's splay state to bend state motivated to improve the operation of the response speed of the liquid crystal of the OCB-mode liquid crystal display panel. (Page 1, [0010])

*Regarding Claim 2,*

In addition to Sakamoto and Yamakita et al as disclosed above, Sakamoto discloses (Figure 1) the gate lines (6m) are formed in parallel over the base plate and the data lines (11) are formed in parallel over the base plate and the gate lines are perpendicular to the data lines (11) formed in order to complete the liquid crystal display.

*Regarding Claim 3,*

In addition to Sakamoto and Yamakita et al as disclosed above, the active devices (Figure 1) comprise thin film transistors (8,5,9).

*Regarding Claim 4,*

In addition to Sakamoto and Yamakita et al as disclosed above, Sakamoto discloses (Figure 1) the pixel electrodes (11) comprise transparent electrodes (Column 5, Row 40-47).

*Regarding Claim 6,*

In addition to Sakamoto and Yamakita et al as disclosed above, Sakamoto discloses (Figure 1) wherein the upper electrode is disposed over a portion of the gate line occupied area to form a storage capacitor (Abstract).

*Regarding Claim 8,*

In addition to Sakamoto and Yamakita et al as disclosed above, Sakamoto discloses (Figure 1) wherein each of the pixel electrodes further comprises at least a second aperture when the first aperture is located underneath the pixel electrode and the second aperture is formed above the first aperture.

**Claim 5,7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto (US 5734177) and of Yamakita et al (US 20020105613) in view of Katayama (US 6100947).

*Regarding Claim 5,*

Sakamoto and Yamakita et al do not disclose the use of a reflective electrode.

Katayama discloses the use of a reflective electrode to prevent light leakage. (Column 10, Rows 42-60).

It would have been obvious to one skilled in the art to modify Sakamoto's display and Yamakita et al's splay state to bend state to include Katayama's reflective electrode to prevent light leakage. (Column 10, Rows 42-60).

*Regarding Claim 7,*

Sakamoto and Yamakita et al do not disclose the use of common lines. Katayama discloses the use of common lines formed between gate lines and upper electrode is disposed over a portion of the common line occupied are to form a storage capacitor which stabilizes the charge storage functions of the storage capacitors. (Column 10, Rows 42-60)

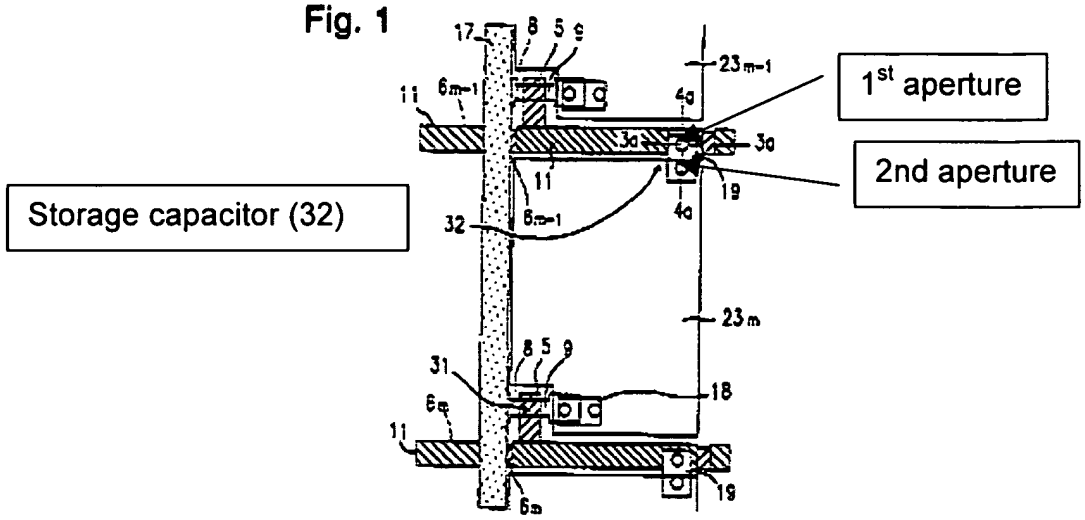
It would have been obvious to one skilled in the art to modify Sakamoto's display and Yamakita et al's splay state to bend state to include Katayama's common line motivated to stabilizes the charge storage functions of the storage capacitors. (Column 10, Rows 42-60)

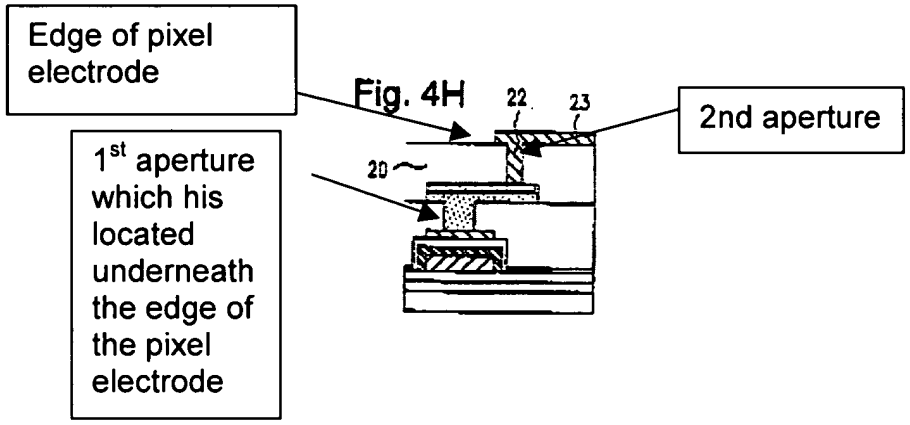
***Response to Arguments***

Applicant's arguments filed 11/14/2005 have been fully considered but they are not persuasive.

Applicant argues "a storage capacitor connection electrode 19" is not a storage capacitor. Examiner mislabled by mistake, Sakamoto, Fig. 1 discloses that the storage capacitor is labeled as (32). Therefore, Sakamoto Fig. 1 discloses wherein each storage capacitor (32) has an upper electrode (11) having at least a first aperture (shown below).

Fig. 1




Regarding Claim 8, applicant argues that Sakamoto shows only one aperture in the form oe f a contact hole 2 located underneath the pixel electrode 23 without an aperture through the connection electrode 10. Shown above in the figures, Sakamoto shows one aperture located underneath the 2nd aperture. Sakamoto discloses (Column 9, Row 55-60) that labeled as 1st aperture shown above in Fig. 4H is first aperture) and 2nd is another aperture.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy P. Chien whose telephone number is 571-272-8579. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lucy Chien
Examiner
Art Unit 2871
LC

ANDREW SCHECHTER
PRIMARY EXAMINER